

## ABSTRACT

A ferroelectric thin-film production method produces a ferroelectric crystal thin film by using a ferroelectric crystal having first and second surfaces opposed to each other and having an etching rate of the first surface greater than that of the second surface and etching the first surface of the ferroelectric crystal. While etching, a predetermined voltage is applied to the ferroelectric crystal. When the etching progresses and the thickness of the ferroelectric crystal reaches a target value, the direction of polarization of the ferroelectric crystal are inverted and the progress of the etching automatically stops. Consequently, a ferroelectric crystal thin film extremely thin and uniform in thickness over a wide area can be produced.